

Tetra Tech, Inc. Progress Report
EPA Contract No. EP-C-17-046
June 29, 2020 through July 26, 2020

Task Order (TO) #003

**Chesapeake Bay TMDL Midpoint Watershed
Implementation Plan and Modeling Support**

**EPA TO-Level Contracting Officer
Representative (TOCOR)**

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ACTIVITIES THIS REPORTING PERIOD:

Task 1. Kickoff and Management

- Prepared and submitted invoice and progress report.
- Communicated regularly with the TOCOR.

Task 2. BMP Panels

- Wastewater Workgroup Support (TD #5)
 - This TD is complete.

Task 3. Modeling Input Data

- Model Report Editing (TD #10)
 - This TD is complete.

Task 4. WIP Support

- Communications Support (TD #1)
 - Communicated with the task leader regarding the requested support and overall project timeline. Prepared agendas and submitted summaries and action items for status calls.
 - Continued to update the case studies spreadsheet with additional case studies leads identified by the WEAT team, Communications team, Bay Journal, and Bay News and Chesapeake Current list serves.
 - Revised and submitted the final Dupont Tree Plaza case study on 7/1/20.
 - Continued to update the case study records with dates and CBPO goals.
 - Submitted the updated case studies table on 7/9/2020. The updated table included CBPO goals, additional recording from various list servers, and was reviewed and updated by a technical editor.
 - Participated in a project status call with the task leader on 7/10/20. Submitted the action items/synopsis from the call on 7/10/20.
 - Developed and submitted the draft Baltimore Green Network case study on 7/10/20 and the final version on 7/15/20.
 - Began researching other data sources to identify recreation economic data that could be used to develop state-specific graphics.
 - Continued work on the "Expanding the Urban Tree Canopy in Prince George's County, Maryland" case study. Awaiting a quote from the contact to incorporate into the story.

- Participated in a call with the task leader and the Data Dashboard staff on 7/21/20. Prior to the call, reviewed the test website and submitted questions and comments for discussion during the call.
- WV WIP Support (TD #2)
 - Participated in Modeling Team meetings on 6/30, 7/14 and 7/21/20.
 - Participated in EPA/WV CAST 2019 call on 7/2/20.
 - Co-chaired MWG July 2020 Quarterly on 7/7/20 and 7/8/20.
 - On multiple days, coordinated w/ DEP senior management in preparation for Management Board call re: CAST 2019 approval and PSC call re: Conowingo, DEIJ.
 - Participated on Management Board call on 7/9/20.
 - Participated in WQGIT Mtg. on 7/13/20.
 - Participated on AGWG call 7/16/20.
 - Participated in call between WVDEP, WVDA, NASS re: AC 2017 increase in OAC “crops” on 7/20/20; follow-up w/ AGWG coordinator.
 - Participated in CLEAR 30 webinar on 7/22/20.
 - Participated in CAST 2019 webinar on 7/22/20.
- Statistical Support (TD #6)
 - Participated and presented at various technical conference calls.
 - Completed resolution of baytrendsmap issues.
 - Continued development of Patuxent River analyses.
 - Completed software changes to migrate baytrends to use survival::Surv objects instead of qw for censored data.
- DE WIP Support (TD #7)
 - This TD is complete.
- MD Septic Support (TD #4)
 - This TD is complete.
- WV GI Planning (TD #8)
 - Held coordination calls to facilitate beginning full engineering design work.
 - Explored additional project work with WVDEP.
- Conowingo WIP Support (TD #9)
 - This TD is complete.
- Trading and Offsets Support (TD #11)
 - No progress to report.
- SAV Fact Sheets (TD #12)
 - This TD is complete.
- New York Developed Sector BMP Support (TD #13)
 - Completed technical memorandum for deliverable #1.
 - Planned for and held joint conference call with New York technical lead and selected Chesapeake Bay developed sector workgroup representatives.
 - Drafted meeting notes from joint conference call.

Task 5. Decision Support Tools

- Decision Support Tool Development (Work conducted by subcontractors DEC and J7) (TD #3):
 - Participated in Modeling and CAST project management meetings to address any modeling issues and determine updates/changes, provide project status updates (CAST management team meetings – 6/30/20, 7/14/20, 7/21/20; CAST development team meetings – 7/14/20).
 - Reviewed CAST development on a weekly basis and updated website and data products as needed.

- Provided training to and answered questions on CAST-2017d and CAST-2019. This included one-on-one meetings with jurisdictions as well as preparation of presentations, graphs, and data analysis.
- Interfaced between states and localities using sound data to find areas of agreement when there is ambiguity about implementation and built consensus about resolving those ambiguities.
- Provided training and analysis to EPA/CBPO staff and responded to questions.
- Discussed approaches for handling BMPs in the models, including scheduling of model changes.
- Developed content for CAST newsletter.
- Worked with urban stormwater team on eliminating the impervious surface BMP.
- Updated the BMP trends over time data visualization on CAST.
- Provided updated 2019 progress data to Bay Journal and CBF.
- Developed approach for downscaling BMP and other model input data for the NHD+ model version.
- Presented to the Ag WG on double cropping methodology. Communicated with NASS on methods.
- Began developing WW data visualization that will be added to CAST.
- Worked with Dr. Lim, VT, on NSF proposal.
- Worked with UMCES on methods for developing a Bay report card.
- Conducted CAST Webinar.
- Responded to user questions about data in CAST and helped with analyzing results.
- Completed several requests for CAST 2019 data.
- Deployed CAST 2019.
- Prepared data for CAST 2017 vs 2019 analyses.
- Completed wastewater data fix using average values.
- Continued improvement of wastewater range checks.
- Began wastewater outfall geography updates.
- Began planning for CAST 2021.
- DNR CAST-19 - 6/29/20
- BMP Confidence Metric for Drexel - 6/29/20
- UMCES Bay report card - 7/1/20
- Modeling Quarterly - 7/7 and 7/8/20
- Management Board Meeting - 7/9/20
- Co-benefits in CAST (Jeff, Gary) - 7/10/20
- WQGIT SRS - 7/13/20
- NASS/CBP use of Ag Census Data - 7/13/20
- Federal Facility WG - 7/14/20
- CAST Data Management Board - 7/14/20
- Shiny App for WW with Developers - 7/15/20
- AGWG presentation - 7/16/20
- NSF VT - 7/16/20
- MDE stream bed and bank - 7/16/20
- NASS CDL - 7/20/20
- CAST Webinar - 7/22/20
- Shiny App for WW with Developers - 7/22/20

Task 6. Exchange Network-Based BMP Tracking

- No TDs assigned at this time.

DELIVERABLES TO DATE:

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Task 2. BMP Panels		
<i>TD #5. Wastewater Workgroup Support</i>		
Powerpoint slides for WWTWG presentation of Boat Pump Out report	4/18	1
Final OWTS BMP report for WWTWG approval	5/18	3
Final draft Boat Pump-Out expert panel report	7/18	2
Powerpoint slides for WQGIT presentation of Boat Pump Out report	7/18	1
Powerpoint slides for Aug. WQGIT presentation of Boat Pump Out report	8/18	1
Final Boat Pump-Out expert panel report	8/18	2
Task 3. Modeling Input Data		
<i>TD #10. Model Report Editing</i>		
Report Template	2/19	2
Task Approach	3/19	3
Front Matter (formatted, edited Word file)	3/19	2
Chapter 1 (formatted, edited Word file)	3/19	2
Chapter 2 (formatted, edited Word file)	3/19	2
Task Approach (annotated with comments from 3/19/16 conf call)	3/19	2
Chapter 3 (formatted, edited Word file)	4/19	2
Chapter 4 (formatted, edited Word file)	6/19	2
Chapter 5 (formatted, edited Word file)	6/19	2
Chapter 6 (formatted, edited Word file)	6/19	2
Chapter 7 (formatted, edited Word file)	7/19	2
Chapter 8 (formatted, edited Word file)	7/19	2
Chapter 9 (formatted, edited Word file)	7/19	2
Appendix A (formatted, edited Word file)	7/19	2
Appendix B (formatted, edited Word file)	7/19	2
Appendix C (formatted, edited Word file)	7/19	2
Appendix D (formatted, edited Word file)	7/19	2
Chapter 1 (revised Word file)	7/19	2
Chapter 2 (revised Word file)	7/19	2
Chapter 3 (revised Word file)	7/19	2
Chapter 4 (revised Word file)	7/19	2
Chapter 5 (revised Word file)	7/19	2
Chapter 6 (revised Word file)	7/19	2
List of Abbreviations and Acronyms (draft)	8/19	2
Appendix E (formatted, edited Word file)	8/19	2
Appendix F (formatted, edited Word file)	8/19	2
Appendix G (formatted, edited Word file)	8/19	2
Front Matter (formatted, edited Word file)	9/19	2
Chapter 7 (revised Word file)	9/19	2
Chapter 8 (revised Word file)	9/19	2

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Chapter 9 (revised Word file)	9/19	2
Appendix A (revised Word file)	9/19	2
Appendix B (revised Word file)	9/19	2
Appendix C (revised Word file)	9/19	2
Appendix D (revised Word file)	9/19	2
Appendix E (revised Word file)	10/19	2
Appendix F (revised Word file)	10/19	2
Final Word files and PDF file of Chapters 0 through 9 and Appendices A through G	1/20	2
Task 4. WIP Support		
<i>TD #1. Communications Support</i>		
BMP icon	4/18	NA
Potential case studies and success stories (4 th set)	4/18	3
Goals and outcomes graphic	5/18, 7/18, 8/18, 9/18, 10/18, 2/19, 3/19	NA
Edited BMP talking points	5/18	3
West Virginia healthy/unhealthy graphic	5/18, 7/18, 8/18, 9/18, 10/18, 2/19, 3/19	NA
Revised Model Fact Sheet	6/18	3
BMPs PowerPoint presentation and Fact Sheet	6/18	3
Potential case studies and success stories (5 th set)	9/18	3
Narrative of the Healthy/Unhealthy Fresh Water Graphic	10/18, 12/18, 3/19	3
Searchable Case Studies Spreadsheet	12/18, 3/19, 8/19, 9/19, 12/19, 2/20, 3/20, 7/20	3
Conowingo Request for Applications Summary	2/19	3

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
List of Benefits	2/19, 3/19, 6/19, 7/19, 8/19, 12/19, 1/20	1
Three ideas for co-benefit fact sheets	3/19	1
5 WEAT Case Study Templates	3/19	1
Goals and Outcomes Narrative	3/19	3
42 one-page summaries for case studies identified by Tetra Tech or the Bay Program	3/19	1
5 WEAT one-page templates for case studies identified by the WEAT team	3/19	1
Fish Habitat Phase III Fact Sheet	4/19, 6/19, 7/19	3
Stream health infographic ideas	5/19	1
Edits to the “Community and Economic Benefits from Healthy Waters” document also called the “Top Ten List”	6/19, 7/19	3
VA Biofuels Case Study	6/19, 8/19	1
Benefits Talking Points	6/19	3
Interactive Version of the Goals and Outcomes Graphic	6/19	1
Action items/synopsis from task order calls	7/19, 8/19	1
Recommendations for case study buildouts	7/19	1
Climate Resiliency fact sheet	7/19	3
Case studies/success story template	7/19, 8/19	1
List of BMPs/conservation practices	7/19, 8/19	1
High resolution photos and permissions to use Glenn Rodes photos	7/19	1
2-page version of the Edits to the “Community and Economic Benefits from Healthy Waters” document also called the “Top Ten List”	8/19, 10/19	3
2-page mock-up of a state-specific case study fact sheet	8/19	1
West Virginia case study	8/19	3
Flash drive of associated case study 1-pagers	8/19	1
Mail merge output of the case studies in Word	9/19	1
Written comments for the new case studies template of River Hill Farm	9/19	3
Decisions for the Fish Economic Infographic	10/19	1
Maryland Fishing Economic Infographic	11/19	1
Map portion of Maryland Fishing Economic Infographic	11/19	1
Map portion of Pennsylvania Fishing Economic Infographic	12/19	1
Draft Virginia Fishing Economic Map	1/20	1
Draft Sediment Factsheet	2/20	3
Draft Urban Top Ten Fact Sheet	2/20	3
Draft Rural Top Ten Fact Sheet	2/20	3
Editorial suggestions for the Final Top Ten Fact Sheet	2/20	3

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Map portion of Delaware Fishing Economic Infographic	3/20	1
Dupont Tree Plaza case study	3/20, 7/20	3
Research summary of economics data	5/20	2
Draft Berkeley Springs, WV case study	5/20	3
Case study buildout recommendations	6/20	1
Recreation economic data mock-up	6/20	1
Suggestions for greening efforts in Baltimore case study	6/20	1
Baltimore Green Network case study	7/20	3
TD #2. WV WIP Support		
Participated in WQGIT mtgs. 4/9, 4/23	4/18	NA
Participated in WV WIP III planning and development mtgs 4/2, 4/26	4/18	NA
Attended and co-chaired Modeling Workgroup Quarterly mtg. 4/10, 4/11	4/18	NA
Participated in Modeling Team Mtgs. 4/3, 4/17, 4/24	4/18	NA
Participated in Wastewater Treatment Workgroup monthly mtg. 4/3	4/18	NA
Participated in Landuse Workgroup monthly mtg. 4/4	4/18	NA
Participated in Wastewater Treatment Workgroup mtg. 5/1	5/18	NA
Participated in ITAT Mtg. 5/8	5/18	NA
Participated in mtg. of Steering Committee for STAC Climate Change Modeling Workshop 5/9	5/18	NA
Participated in Modeling Team Mtgs. 5/8, 5/15, 5/22	5/18	NA
Attended/presented at WV AG WIP3 Stakeholders Mtg. 5/14	5/18	NA
Participated in WQGIT mtg. 5/14	5/18	NA
Participated on Coregulator's Call 5/17	5/18	NA
Attended CBP Science for WV WIP3 Mtg. 5/21	5/18	NA
Participated in WV Trib Team Mtg. 5/31	6/18	NA
Participated in 2YR Milestone evaluation call between WV and EPA 5/31	6/18	NA
Chaired MWG Mtg. 6/5	6/18	NA
Participated in Wastewater Treatment Workgroup monthly mtg. 6/5	6/18	NA
Participated in WQGIT mtgs. 6/11, 6/18	6/18	NA
Participated in ITAT Mtg. 6/12	6/18	NA
Met w/WVDEP leadership to prepare for July 9 PSC mtg. 6/26	6/18	NA
Participated in Modeling Team Mtgs. 5/31 and 6/26	6/18	NA
Attended PSC Mtg. 7/9	7/18	NA
Chaired MWG Quarterly Mtg. 7/10	7/18	NA
Participated in WV Trib Team WIP III outreach planning meeting 7/11	7/18	NA
Participated in STAC workshop Steering Committee mtgs. 7/12, 7/26	7/18	NA
Participated in Modeling Team Mtg. 7/17	7/18	NA
Participated in WQGIT meeting 7/23	7/18	NA
Attended/supported WIP 3 public meeting in Martinsburg, WV 7/30	8/18	NA
Attended/supported WIP 3 public meeting in Moorefield, WV 7/31	8/18	NA
Participated in Modeling Team meetings on 7/31 and 8/14	8/18	NA
Participated in WV Trib Team meeting on 8/2	8/18	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in WQGIT meeting on 8/13	8/18	NA
Participated in ITAT meeting on 8/14	8/18	NA
Participated in WV WIP III Stream Restoration subgroup meeting on 8/22	8/18	NA
Finalized "Strawman WIP3" input deck and sent to key trib team members w/ documentation 8/22	8/18	NA
Participated in Modeling Team meetings on 8/28, 8/29, 9/5 and 9/18/18	9/18	NA
Participated in WV Trib Team WIP 3 Planning meeting on 8/28/18	9/18	NA
Participated in kickoff meeting for Trib Team WIP 3 Cacapon Watershed subgroup on 8/29/18	9/18	NA
Co-chaired Modeling Workgroup meeting 9/11/18	9/18	NA
Participated in calls of the STAC Climate Change Modeling 2.0 Workshop steering committee 8/30, 9/5, 9/13/18 and attended workshop 9/24,25/18	9/18	NA
Provided first draft of WIP 3 text relative to streambank restoration for WV Trib Team WIP III Stream Restoration subgroup meeting on 9/17/18	9/18	NA
Participated in WV Trib Team meeting on 10/2	10/18	NA
Participated in ITAT meeting on 10/9	10/18	NA
Participated in WQGIT meetings on 10/9 and 10/22	10/18	NA
Participated in Modeling Team meeting on 10/10	10/18	NA
Participated in WIP III Cacapon Watershed subgroup meeting on 10/15	10/18	NA
Chaired MWG Quarterly Mtg. 10/16,17	10/18	NA
Participated in WIP III Stream Restoration subgroup meeting on 10/23	10/18	NA
Participated in WQGIT meetings on 11/13	11/18	NA
Participated in WV Trib Team meeting on 11/7	11/18	NA
Participated in WIP III Stream Restoration subgroup meeting on 11/13	11/18	NA
Participated in Modeling Team meetings on 10/30 and 11/6	11/18	NA
Participated in Modeling Team meetings on 11/27, 12/4 and 12/18	12/18	NA
Participated in WQGIT meetings on 12/10	12/18	NA
Participated in ITAT meeting on 12/11	12/18	NA
Participated in GAAT call 11/28	12/18	NA
Participated in LUWG Meeting 12/12	12/18	NA
Participated in WV Trib Team meeting 12/12	12/18	NA
Participated in WIP3 Planning meeting 12/19	12/18	NA
Participated in Conowingo interview 12/21	12/18	NA
Participated in Modeling Team meetings on 1/29 and 2/5	2/19	NA
Participated in WIP3 Planning meeting 2/5	2/19	NA
Participated in WQGIT meeting on 2/11	2/19	NA
Participated in ITAT meeting on 2/12	2/19	NA
Participated in WV Trib Team meeting 2/12	2/19	NA
Chaired MWG Quarterly Mtg. 2/19,20	2/19	NA
Made WIP3 presentation to WVDEP 2/24	2/19	NA
Participated in WIP3 Planning meeting 3/7	3/19	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in ITAT meeting on 3/12	3/19	NA
Participated in WQGIT meeting on 3/11 and 3/25	3/19	NA
Participated in Modeling Team meetings on 2/26 and 3/19	3/19	NA
Attended STAC AEIOU on 3/20 and 3/21	3/19	NA
Attended Climate Resiliency WG Mtg. on 2/25	3/19	NA
Attended WTWG Mtg. on 3/7	3/19	NA
Submitted Conservation history and goals to CBPO 2/26	3/19	NA
Submitted Draft WIP3 Wastewater Input deck to CBPO 2/27	3/19	NA
Submitted Draft WIP3 Cast scenario to CBPO 3/26	3/19	NA
Chaired MWG Quarterly Mtg. 4/2,3	4/19	NA
Participated in Modeling Team meetings on 4/9 and 4/16	4/19	NA
Participated in WQGIT meetings on 4/8 and 4/22	4/19	NA
Participated in ITAT meeting on 4/9	4/19	NA
Participated in WIP3 Planning meeting 4/4	4/19	NA
Participated in WV Trib Team meeting 4/10	4/19	NA
Submitted Final Draft WIP3 Cast scenario to CBPO 4/10	4/19	NA
Participated in Modeling Team meetings on 5/7, 5/14, 5/21	5/19	NA
Participated in WQGIT meeting on 5/13	5/19	NA
Participated and presented at Climate Resiliency WG Mtg. on 5/20	5/19	NA
Participated in Conowingo Steering Committee meeting on 5/15	5/19	NA
Met on 5/6 with DEP leadership to prepare for PSC meeting	5/19	NA
Participated in Modeling Team meeting on 5/29	6/19	NA
Chaired MWG Mtg. on 5/30	6/19	NA
Participated in WQGIT meeting on 6/10	6/19	NA
Participated in ITAT meeting on 6/11	6/19	NA
Participated in WV Ag BMP Implementation Pilot call on 6/24	6/19	NA
Participated in WIP3 Planning meeting on 6/25	6/19	NA
Participated in Modeling Team meeting on 7/2	7/19	NA
Participated in WQGIT meeting on 7/8	7/19	NA
Co-chaired MWG Quarterly Mtg. 7/16,7/17	7/19	NA
Participated in poultry litter mtg. in Moorefield, WV on 7/11	7/19	NA
Participated in buffer workgroup kick-off call on 7/15	7/19	NA
Participated on EPA WIP3 evaluation call on 7/16	7/19	NA
Participated in WIP3 Planning meeting on 7/18	7/19	NA
Participated in Modeling Team meetings on 8/6, 8/13, 8/20	8/19	NA
Participated in WQGIT meeting on 8/19	8/19	NA
Participated in WIP3 Planning meeting on 8/8	8/19	NA
Participated in Modeling Team meetings on 9/3, 9/11, 9/24	9/19	NA
Participated in Wastewater Treatment Workgroup meeting on 9/3/19	9/19	NA
Participated in Landuse Workgroup meeting on 9/4/19	9/19	NA
Participated in WQGIT meeting on 9/9/19	9/19	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Co-chaired Modeling Workgroup meeting on 9/12/19	9/19	NA
Participated in Urban Stormwater Workgroup meeting on 9/17/19	9/19	NA
Participated in Modeling Team meeting on 10/24	10/19	NA
Participated in WQGIT meeting on 10/15/19	10/19	NA
Co-chaired Modeling Workgroup meeting on 10/8/19-10/9/19	10/19	NA
Participated in Urban Stormwater Workgroup meeting on 10/15/19	10/19	NA
Participated in LUWG Mtg on 11/6/19	11/19	NA
Participated in WTWG Mtg. on 11/7/19	11/19	NA
Participated in Modeling Team meetings on 10/29/19 and 11/19/19	11/19	NA
Participated in WQGIT meeting on 11/12/19	11/19	NA
Participated in WV Trib Team Mtg. on 11/13/19	11/19	NA
Participated in Modeling Team meetings on 12/3/19, 12/19/19, 12/17/19	12/19	NA
Participated in joint LUWG/FWG Mtg on 12/4/19	12/19	NA
Co-chaired Modeling Workgroup meeting on 12/5/19	12/19	NA
Participated in WQGIT meeting on 12/9/19	12/19	NA
Participated in joint TCW/WWTWG Mtg. on 12/11/19	12/19	NA
Co-chaired MWG Quarterly Mtg. on 1/7,1/8/20	1/20	NA
Participated in WQGIT meeting on 1/13/20	1/20	NA
Participated in WV Trib Team Mtg. on 1/10/20	1/20	NA
Participated in Modeling Team meetings on 1/14/20 and 1/21/20	1/20	NA
Participated in AGWG meeting on 1/16/20	1/20	NA
Prepared WV senior leadership on 1/15/20 for 1/24/20 PSC meeting	1/20	NA
Participated in Modeling Team meeting on 2/4/20	2/20	NA
Co-chaired MWG Quarterly Mtg. on 2/4/20	2/20	NA
Participated in WQGIT face-to-face Climate Mtg. on 2/10/20 and 2/11/20	2/20	NA
Participated on EPA/WV 2yr milestone call on 2/12/20	2/20	NA
Participated in WV Trib Team Mtg. on 2/19/20	2/20	NA
Participated in Modeling Team meetings on 2/25, 3/3, 3/17, 3/24, 3/31	3/20	NA
Participated in AGWG meeting on 3/3/20	3/20	NA
Participated in LUWG meeting on 3/4/20	3/20	NA
Participated in WTWG meeting on 3/5/20	3/20	NA
Participated in WVDEP/CBP CAST 2019 call on 3/20/20	3/20	NA
Participated in WQGIT meeting on 3/23/20	3/20	NA
Participated in AGWG meeting on 4/16/20	4/20	NA
Co-chaired MWG Quarterly Mtg. on 4/7/20 and 4/8/20	4/20	NA
Participated in Modeling Team meetings on 4/14/20 and 4/21/20	4/20	NA
Participated in WQGIT meeting on 4/27/20	5/20	NA
Participated in Modeling Team meetings on 4/28, 5/5 and 5/19/20	5/20	NA
Participated/presented at WV Tributary Team Mtg. on 4/30/20	5/20	NA
Participated in WTWG meeting on 5/7/20	5/20	NA
PSC preparation with DEP senior management on 5/20/20	5/20	NA

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Participated in EPA/WV 2 yr. MS call on 5/18/20	5/20	NA
Participated in Modeling Team meetings on 6/2/20, 6/16/20, 6/23/20	6/20	NA
Participated in WQGIT meetings on 5/26/20 and 6/22/20	6/20	NA
Participated in joint MWG, CRWG, USWG meeting on 6/16/20	6/20	NA
Participated in WVDEP/CBPO CAST 2019 meeting on 6/11/20	6/20	NA
Participated in WV Tributary Team Mtg. on 6/24/20	6/20	NA
PSC preparation with DEP senior management on 6/24/20	6/20	NA
Participated in Modeling Team meetings on 6/30/20, 7/14/20, 7/21/20	7/20	NA
Participated in Management Board Mtg. on 7/9/20	7/20	NA
Participated in WQGIT meeting on 7/13/20	7/20	NA
Co-chaired MWG Quarterly Mtg. on 7/7/20 and 7/8/20	7/20	NA
Participated in AGWG meeting on 7/16/20	7/20	NA
Prepared WV senior leadership for 7/9/20 MB and 7/16 PSC calls	7/20	NA
TD #4: MD Septic Support		
Technical Memo: Data Collection and Spatial Analysis Update	11/18	2
Notes from December 4, 2018 progress call	12/18	2
Notes from December 28, 2018 progress call	12/18	2
Notes from January 31, 2019 and February 14, 2019 progress calls	2/19	2
GIS package deliverable	3/19	3
Prioritization tool deliverable	3/19	3
Draft and final report	3/19	2
TD #6: Statistical Support		
Participated in technical meetings (4/30, 5/22)	5/18	NA
Rmd script for performing GAM analyses for multiple flow averaging windows	5/18	1
Updated baytrends, v1.0.3 (5/3) and v1.0.4 (5/14)	5/18	1
R and Rmd script for sending output to multiple files (5/11)	5/18	1
Participated in technical meetings (6/22, 6/27)	6/18	NA
R script demonstrating baytrends:gamPlotDisp (6/26)	6/18	1
R script and functions for post-processing figures including time series and slope plots (6/26)	6/18	1
R script demonstrating how to average data from multiple layers (6/26)	6/18	1
baytrends, v1.0.7 posted to CRAN	7/18	4
Draft deSeasonalize function	7/18	1
Draft added variable plot procedure	7/18	1
Revised baytrends function, computeResiduals (formerly deSeasonalize)	8/18	1
Example Potomac River analyses	8/18	1
Revised plotting functions func_make_2column_figures and func_make_slope_plots	9/18	1
Revised algorithm to compute seasonally average time series	1/19	1
Uploaded baytrends v1.1.0 to CRAN	3/19	1
Variable documentation spreadsheet for baytrends	3/19	1

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
Pre-release baytrends v1.1.0.9002—improved error trapping	6/19	1
Pre-release baytrends v1.1.0.9003—seasonal analyses	6/19	1
Pre-release baytrends v1.1.0.9004—punch list items related to error trapping and seasonal analyses	6/19	1
Shiny app tool to create maps	9/19	1
Uploaded v1.2.1 baytrends to CRAN and submitted a summary memo	3/20	1
v1.2.1.8011 baytrends upgrade for survival::Surv	7/20	2
v1.1.0.9003 baytrendsmap	7/20	2
TD #7. DE WIP Support		
Participated in WIP steering committee planning mtg.	5/18	NA
Participated in Ag and Developed Sector WIP mtgs.	6/18	NA
Participated in Ag Sector WIP meeting.	12/18	NA
Draft Ag Sector WIP Fact Sheet	12/18	3
Draft Phase III WIP for public and EPA review	4/19	3
Response to comments appendix for revised Phase III WIP	8/19	2
TD #8. WV GI Planning		
Draft presentation, factsheets and expression of interest form	10/18	1
Revised presentation and factsheets	11/18	1
Maps for Romney workshop	7/19	2
Facilitated workshop in Romney	8/19	1
Martinsburg site assessment	11/19	2
Romney Draft Workshop Memo	12/19	2
Maps for Martinsburg workshop	1/20	2
Facilitated and presented at public meeting and workshop in Martinsburg	1/20	1
Romney Final Workshop Memo	1/20	3
Romney Preliminary Cost Estimate	2/20	2
Romney G3 grant application assistance	3/20	2
Martinsburg draft Workshop and Concept Design report	4/20	3
Martinsburg updated draft Workshop and Concept Design report	4/20	3
TD #9. Conowingo WIP Support		
Conowingo WIP Steering Committee Presentation	2/19	2
Conowingo WIP Steering Committee Presentation and matrix	3/19	2
Conowingo WIP Steering Committee Presentation	5/19	2
Conowingo WIP Steering Committee Presentation	6/19	2
Draft Documentation for WIP	6/19	2
Final draft Documentation for WIP	7/19	2
TD #11. Trading and Offsets Support		
Project schedule	6/19	1
Assessment report outline	6/19	1
Draft executive summary for Virginia's trading and offset program	9/19	2
TD #12. SAV Fact Sheets		
Submitted SAV Fact Sheets	11/19	3

Product/Deliverable	Date (mm/yy)	Level of QA/QC*
TD #13 NY BMP Verification		
Deliverable #1 – Technical memorandum documenting developed sector review	7/20	2
Task 5. Decision Support Tools		
TD #3. Decision Support Tool Development (conducted by subcontractors DEC and J7)		
DE Developed Sector CAST training materials and Summaries of Most Cost Effective Ag and Developed BMPs in DE	9/18	NA
NY Phase III WIP Summary Presentation	9/18	NA

*1 = Minimal review is done by the author, including electronic spell/grammar-checking and proof-reading. 2 = Internal review of deliverable not intended to be widely distributed is performed by an impartial person (i.e., technical staff member or editor). 3 = Review of deliverable is performed by a qualified senior-level person and a technical editor, as appropriate. 4 = Final release of major deliverable that will be widely distributed. This review consists of QA/QC review level 3 plus review/final release by both the Tt Technical Monitor and Tt Project Manager. C = Final release of contract documents (e.g., work plan, progress report, invoices) by Tt Program Manager, Project Manager, and Contracts Management staff. P = External peer-review is done if requested by the EPA Project Manager.

DIFFICULTIES ENCOUNTERED AND REMEDIAL ACTION TAKEN DURING REPORTING PERIOD:

- Nothing to report

ACTIVITIES NEXT REPORTING PERIOD:

Task 1. Kickoff and Management

- Prepare and submit invoice and progress report.
- Communicate regularly with the TOCOR.

Task 2. BMP Panels

- Wastewater Workgroup Support (TD #5)
 - This task is complete unless EPA requests additional support.

Task 3. Modeling Input Data

- Model Report Editing (TD #10)
 - This task is complete unless EPA requests additional support.

Task 4. WIP Support

- Communications Support (TD #1)
 - Participate in project status calls with the task leader. Submit agendas prior to the calls and action items after the calls.
 - Continue to update the searchable case studies table with leads identified by the WEAT team, Communications team, Bay Journal, and Bay News and Chesapeake Current list serves.
 - Continue to research data sources to develop economic infographics.
 - Develop recreation infographics based on OIA data, if requested.
 - Submit the draft Prince George's County trees case study.
 - Continue to prepare the case studies spreadsheet for submission to the Data Dashboard.
 - Continue to coordinate with the Data Dashboard staff and make recommendations on the draft case studies search tool.
 - Begin development of additional case study buildouts.

- Submit the Climate Resiliency Fact Sheet, if requested.
 - Update the Fish Habitat Fact Sheet, if requested.
 - Prepare and update communication materials, as requested.
- WV WIP Support (TD #2)
 - Participate in Modeling Team calls.
 - Co-chair MWG Meeting, if scheduled.
 - Participate in WQGIT Mtg. on 8/24/20.
 - Participate in WV Trib Team call 8/26/20.
 - Provide technical assistance to WV, as needed.
- Statistical Support (TD #6)
 - Complete Patuxent River analyses supporting structure equation modeling analyses.
- DE WIP Support (TD #7)
 - This task is complete unless EPA requests additional support.
- MD Septic Support (TD #4)
 - This task is complete. No additional work is anticipated.
- WV GI Planning (TD #8)
 - Hold additional coordination calls, as needed, during full engineering design work.
- Conowingo WIP Support (TD #9)
 - Additional work not anticipated.
- Trading and Offsets Support (TD #11)
 - Awaiting EPA instruction to proceed.
 - Continue with executive summaries for trading and offset programs in each state.
 - Revise draft executive summary for Virginia's trading and offset program based on EPA's comments with a focus on changes after 2016.
 - Discuss revised version of executive summary for Virginia with EPA and proceed with other jurisdictions as directed by EPA.
- SAV Fact Sheets (TD #12)
 - This task is complete. No additional work is anticipated.
- New York Developed Sector BMP Support (TD #13)
 - Complete technical memorandum documenting June conference call.
 - Begin to draft statistical survey procedures.

Task 5. Decision Support Tools

- Decision Support Tool Development (Work conducted by subcontractors DEC and J7) (TD #3):
 - Participate in scheduled meetings.
 - Respond to CAST questions and requests for assistance.
 - Incorporate additional functionality into CAST.
 - Support the incorporation of co-benefits in CAST.
 - Transition to CAST-21.
 - Support users in analyzing results and using CAST.
 - Respond to user questions about changes in CAST2019.
 - Continue analysis of CAST 2017 vs 2019.
 - Fix point source app QAQC issues.
 - Begin NEIEN portal development.

Task 6. Exchange Network-Based BMP Tracking

- No work anticipated.